

CLAIMS

We claim:

[initials]
1. A method for generating mammalian neural-crest stem cells comprising inducing neuroepithelial stem cells to differentiate in vitro, thereby generating said neural crest stem cells..

5 2. The method of claim 1 wherein said inducing comprises replating said neuroepithelial stem cells on a laminin-coated substrate.

3. The method of claim 2 wherein said inducing further comprises withdrawing a mitogen.

4. The method of claim 3 wherein said mitogen is FGF.

5. The method of claim 2 wherein said inducing further comprises withdrawing chick embryo extract.

[initials] 6. The method of claim 1 wherein said inducing comprises withdrawing a mitogen.

7. The method of claim 6 wherein said mitogen is FGF.

8. The method of claim 1 wherein said inducing comprises withdrawing chick embryo extract.

Sub D2> 9.

The method of claim 1 wherein said inducing comprises adding a dorsalizing agent to the cells.

10. The method of claim 9 wherein said dorsalizing agent is a member selected from the group consisting of bone morphogenetic proteins.

5 11. The method of claim 10 wherein said dorsalizing agent is BMP-2.

12. The method of claim 10 wherein said dorsalizing agent is BMP-4.

13. The method of claim 10 wherein said dorsalizing agent is BMP-7.

14. A method of generating cells of the peripheral nervous system comprising the steps of:

(a) inducing neuroepithelial stem cells to differentiate in vitro, thereby generating neural crest stem cells;

(b) inducing said neural crest stem cells to differentiate in vitro, thereby generating peripheral nervous system cells.